REMARKS

Claims 1-32 are presently pending in this application. Claims 1, 4, 7, 10, 19 and 25-32 have been amended to more particularly define the claimed invention. Claims 1-24 have been previously withdrawn from examination.

It is noted that the amendments are made only to more particularly define the invention and **not** for distinguishing the invention over the prior art, for narrowing the scope of the claims, or for any reason related to a statutory requirement for patentability. It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claims 25-32 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 25-32 has been amended in a manner believed fully responsive to all points raised by the Examiner.

Claims 25-26 and 31-32 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315.

Claims 27-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bortolini, U.S. Pat. No. 6,813,408, further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315.

Claims 29-30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, further in view of Yamashita, et al., U.S. Pat. No. 5,675,676.

These rejections are respectfully traversed in view of the following discussion.

I. THE RESTRICTION REQUIREMENT

Applicants respectfully traversed the restriction requirement made in the Office Action mailed August 31, 2006 alleging the following inventions: Group I, claims 1-24, and Group II, claims 25-32.

To support a requirement for restriction between combination and subcombination inventions, both two-way distinctness and reasons for insisting on restriction are necessary, i.e., there would be a serious search burden as evidenced by separate classification, status, or field of search. See MPEP § 808.02.

The inventions are distinct if it can be shown that a combination as claimed:

(A) does not require the particulars of the sub-combination as claimed for patentability (to show novelty and unobviousness), and

(B) the subcombination can be shown to have utility either by itself or in another materially different combination.

When these factors cannot be shown, such inventions are not distinct.

However, the Examiner states that the basis of the restriction requirement is that, "in the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because any other switching element not claimed by Applicant can provide switching operation necessary for the invention in claims 1-24 to function properly." (Emphasis added.)

The Examiner cannot maintain that any other switching element NOT claimed by Applicant can provide switching operation necessary for the invention, since any other switching element not claimed by the Applicant is outside of Applicant's claimed invention and this is an improper basis for a restriction requirement.

II. APPLICANT'S CLAIMED INVENTION

The claimed invention (as defined, for example, by independent claim 25) is directed to a switching device that transmits a plurality of external optical signals through a plurality of optical signal communication lines, including a plurality of optical multiplexing and demultiplexing devices each corresponding to at least one of the plurality of optical signal communication lines and each device including an input and output port, wherein optical signals of different types are communicated between the input and output ports of different devices of the plurality of optical multiplexing and demultiplexing devices through one of the plurality of optical signal communication lines that corresponds to specific optical multiplexing and demultiplexing devices.

A plurality of optical switches correspond to and communicates one of the plurality of external optical signals between the plurality of optical signal communication lines and an input and output port of one of the specific optical multiplexing and demultiplexing devices, wherein when no failure has occurred in one of the plurality of optical signal communication lines, and when a failure has occurred in one of the plurality of optical signal communication lines, the one of the plurality of external optical signals is communicated to an input and output port of an other of the specific optical multiplexing and demultiplexing devices, wherein bidirectional communications are conducted through the input and output ports.

Conventionally, in a large-capacity and high-speed optical network, a direction of a signal that can be transmitted by one piece of an optical fiber transmission line is only one direction. When bidirectional signals of an upward signal and a downward signal are to be transmitted between communication devices facing each other, two pieces of optical fiber communication lines are required. Moreover, in order to provide signal protection against a

failure in an optical fiber communication line, two pieces of optical fiber communication lines, one serving as an optical fiber transmission line being presently activated and another serving as an optical fiber transmission line being prepared for standby use for each of the upward and downward signals. Therefore, in this case, four pieces of optical fiber transmission lines are required. (Application at page 1, line 20 to page 2, line 5.)

The claimed invention (e.g., as recited in claims 25 and 31, and similarly in claims 27 and 29), on the other hand, includes *a plurality of optical switches that correspond to and communicates one of said plurality of external optical signals between said plurality of optical signal communication lines and an input and output port of one of said specific optical multiplexing and demultiplexing devices*. This feature is important for allowing the optical multiplexing and demultiplexing devices to continue operation if an optical fiber transmission line previously assigned to an optical multiplexer demultiplexing device is compromised. (See Application at page 32, lines 2-5.)

III. THE ALLEGED PRIOR ART REJECTIONS

A. 35 U.S.C. § 102(b) Rejection over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315

The Examiner alleges that Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, (Sugawara), teaches the invention of claims 25-26 and 31-32.

Applicant submits, however, that Sugawara does not teach or suggest, "*a plurality of optical switches that correspond to and communicates one of said plurality of external optical signals between said plurality of optical signal communication lines and an input and output port of one of said specific optical multiplexing and demultiplexing devices*," and "*wherein bidirectional communications are conducted through the input and output ports*."

Sugawara discloses in Figs. 2A-3B wavelength multiplexing sections 1-1 and 2-2 and wavelength of demultiplexing sections 1-2 and 2-1 interposed between corresponding optical transmission lines (that communicate between East SRV and West SRV, and East PRT and West PRT), and optical switch circuits 1-3 and 2-3. Therefore, Sugawara fails to teach or suggest optical switch circuits 1-3 and 2-3 between corresponding optical transmission lines (E-SRV/W-SRV, and E-PRT/W-PRT) and wavelength multiplexing/demultiplexing sections 1-1, 2-2, 1-2, and 2-1.

Additionally, Sugawara fails to teach or suggest, *wherein bidirectional communications are conducted through the input and output ports*.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art reference fails to teach or suggest each and every element and feature of Applicant's claimed invention.

B. 35 U.S.C. § 103(a) Rejection over Bortolini, U.S. Pat. No. 6,813,408 further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315

The Examiner alleges that Bortolini, U.S. Pat. No. 6,813,408, (Bortolini), further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, (Sugawara), makes obvious the invention of claims 27-26.

The Examiner concedes that Bortolini fails to disclose Applicant's claimed "*optical switch*," per independent claim 27.

However, Applicant submits, that Bortolini further in view of Sugawara does not teach or suggest, "*an optical switch between said plurality of optical signal communication lines and said plurality of second optical multiplexing and demultiplexing devices*," and "*wherein bidirectional communications are conducted through the input and output ports*."

As discussed above, Sugawara discloses in Figs. 2A-3B wavelength multiplexing sections 1-1 and 2-2 and wavelength of demultiplexing sections 1-2 and 2-1 interposed between corresponding optical transmission lines (that communicate between East SRV and West SRV, and East PRT and West PRT), and optical switch circuits 1-3 and 2-3. Therefore, Sugawara fails to teach or suggest optical switch circuits 1-3 and 2-3 between corresponding optical transmission lines (E-SRV/W-SRV, and E-PRT/W-PRT) and wavelength multiplexing/demultiplexing sections 1-1, 2-2, 1-2, and 2-1.

Additionally, as discussed above, Sugawara fails to teach or suggest, *wherein bidirectional communications are conducted through the input and output ports*.

With respect to the rejection of Applicant's claims 27-26, Applicant respectfully submits that Bortolini would not have been combined with Sugawara and even if combined, the combination would not teach or suggest each and every element of the claimed invention, since Bortolini, as conceded by the Examiner, fails to teach or suggest, "*an optical switch between said plurality of optical signal communication lines and said plurality of second optical multiplexing and demultiplexing devices*," and "*wherein bidirectional communications are conducted through the input and output ports*," and Sugawara fails to overcome the deficiencies of Bortolini.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references (alone or in combination) fail to teach or suggest each and every element and feature of Applicant's claimed invention.

C. 35 U.S.C. § 103(a) Rejection over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 further in view of Yamashita, et al., U.S. Pat. No. 5,675,676

The Examiner alleges that Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, (Sugawara), further in view of Yamashita, et al., U.S. Pat. No. 5,675,676, (Yamashita), makes obvious the invention of claims 29-30.

Applicant submits, however, that Sugawara further in view of Yamashita does not teach or suggest, "*a plurality of optical switches that correspond to and communicates said external optical signal between said two optical signal communication lines and said two optical multiplexing and demultiplexing devices*," and "*wherein bidirectional communications are conducted through the input and output ports*."

As discussed above, Sugawara discloses in Figs. 2A-3B wavelength multiplexing sections 1-1 and 2-2 and wavelength of demultiplexing sections 1-2 and 2-1 interposed between corresponding optical transmission lines (that communicate between East SRV and West SRV, and East PRT and West PRT), and optical switch circuits 1-3 and 2-3. Therefore, Sugawara fails to teach or suggest optical switch circuits 1-3 and 2-3 between corresponding optical transmission lines (E-SRV/W-SRV, and E-PRT/W-PRT) and wavelength multiplexing/demultiplexing sections 1-1, 2-2, 1-2, and 2-1.

Additionally, as discussed above, Sugawara fails to teach or suggest, *wherein bidirectional communications are conducted through the input and output ports*.

With respect to the rejection of Applicant's claims 29-30, Applicant respectfully submits that Yamashita would not have been combined with Sugawara and even if combined, the combination would not teach or suggest each and every element of the claimed invention, since Sugawara, as pointed out above, fails to teach or suggest, "*a plurality of optical switches that correspond to and communicates said external optical signal between said two optical signal communication lines and said two optical multiplexing and demultiplexing*

devices," and "*wherein bidirectional communications are conducted through the input and output ports*."

Yamashita discloses an optical branching apparatus including a plurality of wavelength to demultiplexing ports include wavelength of demultiplexing/multiplexing units each connected to a branch point of an optical transmission line. However, Yamashita fails to disclose any optical switch interconnected between an optical transmission line and the demultiplexing ports.

Therefore, Yamashita fails to overcome the deficiencies of Sugawara.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references (alone or in combination) fail to teach or suggest each and every element and feature of Applicant's claimed invention.

IV. FORMAL MATTERS AND CONCLUSION

The Title has been amended in accordance with the suggestion by the Examiner.

In view of the foregoing, Applicant submits that claims 1-32, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: Nov. 27, 2006

Donald J. Lecher, Esq.
Reg. No. 41,933
Sean M. McGinn, Esq.
Reg. No. 34,386

McGinn Intellectual Property Law Group, PLLC
8321 Old Courthouse Rd., Suite 200
Vienna, Virginia 22182
(703) 761-4100
Customer No. 21254